

We claim:

1. A preformed catheter set for production of linear ablation lines in the left and right atrium for treatment of atrial fibrillation, comprising:

at least a first catheter including a pre-shaped distal segment having a distal linear ablation antenna and a U-shaped curve portion proximal to the distal linear ablation antenna.

2. The catheter set of claim 1, wherein the U-shaped curve portion has a length of 4-6 cm.

3. The catheter set of claim 1, wherein the catheter set is a pre-shaped left atrial catheter set to provide complete electrical isolation of the pulmonary veins from the surrounding left atrium to prevent focal triggering of atrial fibrillation and reentry around the pulmonary veins and mitral valve annulus, the U-shaped curve of the first catheter allows catheter contact with a posterior wall of the left atrium horizontally just superior or just inferior to pulmonary veins, and the catheter set further includes

a second catheter including a pre-shaped distal segment having a distal linear ablation antenna and a 90° deflected portion proximal to the linear ablation antenna;

a third catheter including a pre-shaped distal segment having a distal linear ablation antenna and a 170-180° deflected portion proximal to the linear ablation antenna.

4. The catheter set of claim 3, wherein the 90° deflected portion of the second catheter is positioned 1-3 cm proximal to the distal linear ablation antenna.

5. The catheter set of claim 3, wherein the 170-180° deflected portion of the third catheter is positioned 1-2 cm proximal to the distal linear ablation antenna.

6. The catheter set of claim 3, wherein the catheters includes a transeptal sheath and the distal segment and the transeptal sheath are relatively movable with respect to each other to deploy the distal segment.
7. The catheter set of claim 1, wherein the catheter set is a pre-shaped right atrial catheter set to provide TV-IVC isthmus ablation, and the catheter set further includes  
5 a second catheter including a pre-shaped distal segment having a distal linear ablation antenna and a 45-60° deflected portion proximal to the linear ablation antenna.
8. The catheter set of claim 7, wherein the 45-60° deflected portion of the second catheter is positioned 1 cm proximal to the distal linear ablation antenna.
- 10 9. The catheter set of claim 7, wherein the catheters includes a transeptal sheath and the distal segment and the transeptal sheath are relatively movable with respect to each other to deploy the distal segment.
10. A method of producing linear ablation lines in the left and right atrium for treatment of atrial fibrillation, comprising:
- 15 providing a preformed catheter set including at least a first catheter including a pre-shaped distal segment having a distal linear ablation antenna and a U-shaped curve portion proximal to the distal linear ablation antenna;
- deploying the preshaped distal segment in the left or right atrium so that the preshaped distal segment of the first catheter takes the U-shaped curve shape;
- 20 linearly ablating the atrium with the distal linear ablation antenna to treat atrial fibrillation.
11. The method of claim 10, wherein the U-shaped curve portion has a length of 4-6 cm.

12. The method of claim 10, wherein the catheter set is a pre-shaped left atrial catheter set to provide complete electrical isolation of the pulmonary veins from the surrounding left atrium to prevent focal triggering of atrial fibrillation and reentry around the pulmonary veins and mitral valve annulus, the U-shaped curve of the first catheter
- 5 allows catheter contact with a posterior wall of the left atrium horizontally just superior or just inferior to pulmonary veins, the catheter set further includes a second catheter including a pre-shaped distal segment having a distal linear ablation antenna and a 90° deflected portion proximal to the linear ablation antenna, and a third catheter including a pre-shaped distal segment having a distal linear ablation antenna and a 170-180°
- 10 deflected portion proximal to the linear ablation antenna; and the method further includes
- creating a first and second linear ablation lesions that connect the superior and inferior pulmonary veins horizontally with the distal linear ablation antenna of the first catheter;
- 15 creating a third linear ablation lesion that connects the left pulmonary veins vertically with the distal linear ablation antenna of the second catheter;
- creating a fourth linear ablation lesion that connects the right pulmonary veins vertically along the inter-atrial septum, with a continuing connecting line to the mitral valve annulus, with the distal linear ablation antenna of the third catheter,
- 20 whereby the linear ablation lesions provide complete electrical isolation of the pulmonary veins from the surrounding left atrium to prevent focal triggering of atrial fibrillation and reentry around the pulmonary veins and mitral valve annulus.

13. The method of claim 12, wherein the 90° deflected portion of the second catheter is positioned 1-3 cm proximal to the distal linear ablation antenna.

14. The method of claim 12, wherein the 170-180° deflected portion of the third catheter is positioned 1-2 cm proximal to the distal linear ablation antenna.

5 15. The method of claim 12, wherein the catheters includes a transeptal sheath and the distal segment and the transeptal sheath are relatively movable with respect to each other to deploy the distal segment, and the method further including deploying the distal segment by moving at least one of the transeptal sheath and the distal segment.

10 16. The method of claim 10, wherein the catheter set is a pre-shaped right atrial catheter set to provide TV-IVC isthmus ablation, and the catheter set further includes a second catheter including a pre-shaped distal segment having a distal linear ablation antenna and a 45-60° deflected portion proximal to the linear ablation antenna, and the method further includes

15 creating a linear ablation lesion from a superior vena cava to an inferior vena cava along a crista terminalis in the posterior right atrium with the distal linear ablation antenna of the first catheter;

creating a linear ablation lesion at sub-Eustachian isthmus along its entire length with the distal linear ablation antenna of the second catheter.

20 17. The method of claim 16, wherein the 45-60° deflected portion of the second catheter is positioned 1 cm proximal to the distal linear ablation antenna.

18. The method of claim 16, wherein the catheters includes a transeptal sheath and the distal segment and the transeptal sheath are relatively movable with respect to each

other to deploy the distal segment, and the method further including deploying the distal segment by moving at least one of the transeptal sheath and the distal segment.